SPS-1000V-5

Radar Warning System

Specifications

Frequency Coverage	Existing radar frequencies (MMW optional)	
Received Signals	Pulse, CW, High PRF, Pulse Doppler	
Reception Coverage	Full azimuth coverage (depending on antenna installation)	
Sensitivity	Contact manufacturer	
Communication Channels	1553B, RS422, PPD, TTL in/out	
Data Processing	By three autonomous processors plus various microprocessors	
Field Loading Capability	The emitter table and operational software may be loaded in the field by a portable field loader	
Recording Capability	Flight Data is downloaded by a portable field loader	
Audio	Composite, Missile Launch (ML) and “New Guy” audio	
Display (CRT display type)	Graphic representation of emitter’s type, receiving angle, relative lethality and threat status	
Interface	Radar blank, flare/chaff dispensing system. 1553B MUX BUS	
Supply Voltage	115 Vac, 400 Hz & 28 Vdc (MIL-STD-704)	
Environment Conditions	MIL-E-5400, Class II qualified	
Units Weight	Analyzer	9 kg.
	Pilot Display & Control	2.2 kg.
	Antennas and Front End Receivers	9.7 kg.
	Superhet Receiver	7.5 kg.

Elbit Systems EW and SIGINT – Elisra Ltd.
48 Mivtza Kadesh St., Bene-Beraq 51203, Israel
www.elbitsystems.com/elisra

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Main Features

- Reliable and unambiguous threat warning against present and future radars
- 100% Probability of Intercept (POI)
- Very fast response time
- Handling very high dense environment
- May be used as a complete system, or as an upgrade to existing systems
- Tie-in with flare/chaff dispensing systems
- Integrated cutting-edge technologies dedicated to meet the complex demand of the next decade
- Flight data recording for pilot debriefing
- Reprogrammable threat library at field level
- Fully supported by hardware and software maintenance facilities at field, Intermediate and Depot levels.

System Architecture

The ELISRA SPS-1000V-5 is a highly sophisticated airborne self protection system offering excellent performance and reliability at low cost. The system integrates two subsystems:

- Basic Self Protection System which detects the classical radars
- Multichannel Superhet IFM Receiver which provides for detection and unambiguous identification of modern cw, high PRF low ERP and pulse doppler radars.

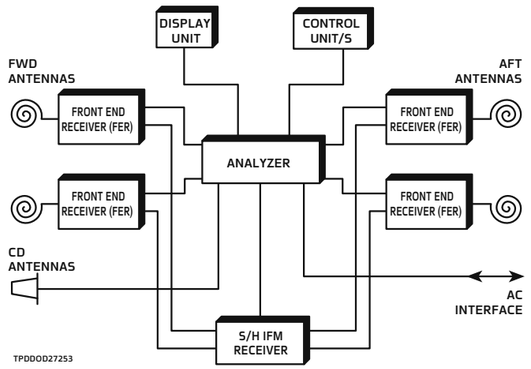
The identified threats are presented to the pilot on a three-inch display unit which provides a graphic representation of the type, angle-of-arrival, relative lethality and status of the threats.
The SPS-1000V-5 represents an advanced design offering complete threat programmability for new and changing environments. This is accomplished with an extensive, easily updated emitter library file. A portable field loader unit enables the loading of the updated emitter tables in the field as well as unloading of the recorded flight data for pilot debriefing. The system modular LRU design and high-level software language provides for easy hardware and software maintenance.

Control And Display

The analyzed threats are displayed on the display unit screen. In addition, audio warnings are dispatched to the pilot through the aircraft intercom system. These displayed threat representations on the display screen allow the pilot to establish the azimuth (with respect to aircraft heading) and emitter type of up to 16 top lethal threats. Up to 128 different symbols can be programmed to represent specific threat types. Additional alert capability for Missile Launch status is provided as well.
The system mode-of-operation is controlled by front-panel switches on a single control unit. The unit enables the pilot to power the system, activate the automatic self test procedure, delete preprogrammed threats from display, define high or low altitude emitter priorities and activate recording of threats into memory.
The display and control functions can be implemented by the central multifunction display unit of the aircraft, via the 1553B serial data link.

Upgrading Existing Systems

The SPS-1000V-5 may be used for upgrading existing systems such as the ALR-46, ALR-69 and other systems. The upgrading may be done with minimal group A changes.

Maintainability

The SPS-1000V-5 is designed for easy hardware and software maintenance. The sophisticated Built-In Test (BIT) provides for on-board fault isolation down to LRU level. Faulty LRUs are easily replaced and then can be plugged to the I/D level computerized test-set for quick isolation and repairing of faulty modules.
The high level software language is easy to maintain by utilizing Integrated Development System (IDS) which is part of the software maintenance package (supplied upon Customer's request).